

## 5.5.1 Effluent Limits/Water Quality Based Effluent Limits/ Effluent Limitations for Specific Waters/Missouri and Mississippi Rivers

### **Applicability:**

This information summarizes the maximum effluent limits for point sources, water contaminant sources and wastewater treatment facilities that discharge to the Missouri and Mississippi Rivers. The key regulatory citation is 10 CSR 20-7.015(2) and 10 CSR 20-7.015(9)(B).

### **Content:**

#### **10 CSR 20-7.015(2):**

For discharges from wastewater treatment facilities that receive primarily domestic waste or from publicly owned treatment works (POTWs):

#### **Activated Sludge Facilities – all variations**

Biochemical Oxygen Demand<sub>5</sub> (BOD<sub>5</sub>) and Total Suspended Solids (TSS)

- BOD<sub>5</sub> - monthly average equal to or less than 30 mg/l
  - weekly average equal to or less than 45 mg/l
- TSS - monthly average equal to or less than 30 mg/l
  - weekly average equal to or less than 45 mg/l
- pH - maintained in the range of 6.0 to 9.0 standard units

#### **Wastewater Stabilization Basins – Lagoons**

- BOD<sub>5</sub> – monthly average equal to or less than 45 mg/l
  - weekly average equal to or less than 65 mg/l
- TSS - monthly average equal to or less than 80 mg/l
  - weekly average equal to or less than 120 mg/l
- pH - maintained above 6.0 standard units

#### **Trickling Filter Facilities**

- BOD<sub>5</sub> - monthly average equal to or less than 45 mg/l
  - weekly average equal to or less than 65 mg/l
- TSS - monthly average equal to or less than 45 mg/l
  - weekly average equal to or less than 65 mg/l
- pH - maintained in the range of 6.0 to 9.0 standard units

## **Special Effluent Limitations**

Where the use of the standard effluent limitations is known or expected to endanger water quality, site-specific effluent limitations will be developed and incorporated into the permit. All permits in a study area for a waste load allocation or TMDL can be modified to reflect the limits established through the study.

The department may require more stringent limitations than the standard limits under the following conditions:

1. For existing facilities, BOD5 and TSS limits may be based on past performance rounded up to the next 5 mg/l range. For new facilities, the limits may be based on the design capability.

2. For new lagoons, the limits should be:

BOD5 - monthly average equal to or less than 45 mg/l

- weekly average equal to or less than 65 mg/l

TSS - monthly average equal to or less than 70 mg/l

- weekly average equal to or less than 110 mg/l

pH - maintained above 6.0 standard units

3. For new trickling filter facilities, the limits should be:

BOD5 - monthly average equal to or less than 40 mg/l

- weekly average equal to or less than 60 mg/l

TSS - monthly average equal to or less than 40 mg/l

- weekly average equal to or less than 60 mg/l

pH - maintained in the range of 6.0 to 9.0 standard units

## **POTW Storm water Facilities with Noncontinuous Discharge**

BOD5 - weekly average equal to or less than 45 mg/l

TSS - weekly average equal to or less than 45 mg/l; TSS can exceed 45mg/l for combined sewer overflow (CSO) treatment devices under certain conditions

pH - maintained in the range of 6.0 to 9.0 standard units

## **Sludge**

Sludge removed in the treatment process is not to be discharged. It is to be used or disposed in accord with the approved sludge management practices.

## **Carbonaceous BOD5 (CBOD5)**

When the wastewater treatment process causes nitrification, the permittee may petition the department for CBOD5 to be substituted for BOD5 at 5 mg/l less than the regular BOD5 limit in the operating permit. The permittee must provide data demonstrating the nitrification is affecting the BOD5 test results.

## Water Treatment Solids

Suspended solids resulting from the treatment of public drinking water (or solids from industrial processes using essentially the same technology) may be returned to the surface water from which they are taken. This includes water withdrawn from wells in the river alluvium.

### 10 CSR 20-7.015(9)(B):

#### *Escherichia coli (E. coli)*

Discharges to segments designated in Table H of 10 CSR 20-7.031 for whole body contact recreation and secondary contact recreation shall not exceed the water quality *E. coli* counts established in subsection (5)(C) of 10 CSR 20-7.031.

During the recreation season, discharges into segments identified as whole body contact "A" areas shall not contain more than:

- - a monthly geometric mean of 126 colonies forming units / 100 ml, and
- - a daily maximum for non-POTWs and weekly average for POTWs of 630 colonies forming units / 100 ml.

During the recreation season, discharges into segments identified as whole body contact "B" areas shall not contain more than:

- - a monthly geometric mean of 206 colonies forming units / 100 ml, and
- - a daily maximum for non-POTWs and weekly average for POTWs of 1030 colonies forming units / 100 ml.

During the recreation season, discharges into segments identified as secondary contact recreation areas shall not contain more than:

- - a monthly geometric mean of 1,134 colonies forming units / 100 ml, and
- - a daily maximum for non-POTWs and weekly average for POTWs of 1,134 colonies forming units / 100 ml.

These limits are in effect during the recreation season from April 1 to October 31. The department may waive or relax this limitation if the owner or operator of the wastewater treatment facility can demonstrate that neither health nor water quality will be endangered. Facilities without disinfection must comply with the implementation schedule in 10 CSR 20-7.015(9)(J). As an alternative to the limits prescribed above, the department may allow permit applicants to conduct a study to develop *E. coli* limits that reflect pathogen decay. A temporary suspension of the bacterial limitation during periods of wet weather may be sought through the process described in 10 CSR 20-7.015(9)(K).

## Legal References:

### *Missouri Clean Water Law, Chapter 644*

[644.026\(8\), \(13\) and \(17\)](#)

Powers and duties of commission--rules, procedure.

[644.051.1\(3\) and .2](#)

Prohibited acts--permits required, when, fee--bond required of permit holders, when--permit application procedures--rulemaking--limitation on use of permit fee moneys.

*Code of State Regulations:*

<a href="#"><u>10 CSR 20-6.010(1)(A) and (5)(A)</u></a>	Construction and Operating Permits - (1)(A) General - Permits Required for Point Sources (5)(A) Operating Permits (OP) - Required
<a href="#"><u>10 CSR 20-7.015(2)</u></a>	Effluent Regulations - Missouri and Mississippi Rivers Limitations
<a href="#"><u>10 CSR 20-7.031(4) and (10)</u></a>	Water Quality Standards (4) Specific Criteria (10) Permittee Compliance Timeframes

**Other Links:**

[5.1 Overview – Effluent Limits](#)

[5.3.2.1 Secondary Treatment](#)

[5.3.2.2 Equivalent to Secondary Treatment](#)

[5.3.3 Best Professional Judgment \(BPJ\) Permit Limits](#)

[6.1.5.3 Analytical Detection Levels-Total Residual Chlorine](#)

[6.1.6.1 Missouri and Mississippi Rivers-Monitoring Req.'s](#)

[7.3.2.2 Combined Sewer Overflows \(CSOs\)](#)

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